

AMENDMENTS TO THE DRAWINGS

The attached sheet(s) of drawings includes changes to Figure 3.

REMARKS

Claims 1-5, 9, and 12-14 are pending, and claims 1-5, 9, and 12-14 stand rejected. By virtue of this response, claims 1, 2, and 12 have been amended, and no claims have been added or cancelled. Applicants have amended claims 1 and 12 to further define the “at least one step.” Support for the amendment may be found in the present application, for example, in paragraphs [0027] through [0029] and Figs. 2 and 3-5; accordingly, no new matter has been added. Therefore, claims 1-5, 9, and 12-14 are currently under consideration.

For the Examiner’s convenience, Applicants’ remarks are presented in the same order in which they were raised in the Office Action.

Objection to the Drawings

The drawings stand objected to under 37 CFR 1.83(a); in particular, the Office Action states that the drawings must show “the at least one step positioned axially aligned with a portion of the at least one set of fluid dynamic grooves.”

Applicants have amended claim 1 and submit that the “at least one step” as presently recited is clearly shown in the amended figure. In particular, Figure 3 (as amended) clearly shows step 460 (which reduces the journal gap in a localized region to narrow the bearing gap and thus counter hydraulic pressure variations during operation) at a position axially aligned with at least a portion of the set of fluid dynamic grooves 300. For example, the lower portion of step 460 is axially aligned with an upper portion of the grooves 300. The amendment to Figure 3 is clearly supported and described by the specification as originally filed; for example, see paragraphs [0027] – [0029] and Figure 4.

Claim Rejections under 35 USC §102

A. Claims 1-5 and 9 stand rejected under 35 U.S.C. 102(b) as being anticipated by Sakatani et al. (U.S. Patent No. 5,046,863).

Claim 1 has been amended to recite that the at least one step defined on the second interfacial surface of the journal gap “comprises a feature that reduces the journal gap in a localized region, and wherein the sleeve and shaft are operable to move axially relative to each other during operation such that the at least one step moves toward an apex of, and at least partially aligned with a portion of, the at least one set of fluid dynamic grooves.”

Applicants submit that Sakatani does not disclose or suggest that the 1) “sleeve and shaft are operable to move axially relative to each other during operation,” and that 2) “the at least one step moves [during operation] toward an apex of, and at least partially aligned with a portion of, the at least one set of fluid dynamic grooves.” In particular, Sakatani does not disclose or suggest that sleeve 6 moves axially relative to shaft 4 during operation, let alone that pit 12 (or the portion below pit 12 of sleeve 6) move axially relative to grooves 15 during operation toward an apex of grooves 15. In contrast to the features of claim 1, Sakatani discloses that the steel ball of thrust receiver 7 is axially supported by being in contact with the thrust receiving surface 11 of shaft 4 during operation; accordingly, there is no axially movement between shaft 4 and sleeve 6 during operation and the disclosed device does not meet the features of claim 1.

Accordingly, Sakatani fails to disclose or suggest the features of claim 1 and the rejection should be withdrawn. Further, claims 2-11, which depend from claim 1, should be allowed for at least similar reasons as claim 1.

B. Claims 12-14 stand rejected under 35 U.S.C. 102(b) as being anticipated by Moritan et al. (U.S. Patent No. 5,715,116).

Claim 12 has been amended to recite that “the shaft and stationary sleeve are operable to move relative to each other such that the pressure regulating means moves axially during operation toward an apex of the bearing means.”

Applicants submit that these features of claim 12 are not disclosed or suggested by Moritan. Moritan discloses, for example, that shaft 12, in particular shaft bottom face 12b, contacts thrust plate 2 and forms a thrust bearing, where abrasion is prevented by the lubricant which is filled

in the very narrow second gap between the shaft bottom face 12b and the thrust plate 22. (Moritan, 7: 52-58; Figs. 1(a)-1(d)) Accordingly, there is no relative movement between shaft 12 and sleeve 21 during operation, or at the very least, very minimal motion between shaft 12 and sleeve 21 such that any feature considered a “step” included with sleeve 21 does not move axially during operation toward an apex of the bearings 12a.

Accordingly, Moritan fails to disclose or suggest the features of claim 12 and the rejection should be withdrawn. Further, claims 13-16, which depend from claim 12, should be allowed for at least similar reasons as claim 12.

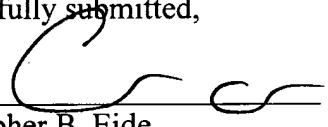
CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 146712016800. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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